

Massachusetts Department of Public Health

Executive Summary of the Public Health Preparedness and Response for Bioterrorism Program

Cooperative Agreement U90/CCU116997-03-1

**Funded by: U.S. Department of Health and Human Resources
Centers for Disease Control and Prevention (CDC)**

Purpose:

To upgrade state and local public health jurisdictions' preparedness for and response to bioterrorism, other outbreaks of infectious disease, and other public health threats and emergencies. Activities ("critical capacities") must be developed in each of the following focus areas:

<u>Focus Areas</u>	<u>Page</u>
Focus Area A – Preparedness Planning and Readiness Assessment	2
Focus Area B - Surveillance and Epidemiology Capacity	7
Focus Area C – Laboratory Capacity – Biological Agents	10
Focus Area E – Health Alert Network/Communications and Information Technology	16
Focus Area F – Communicating Health Risks and Health Information Dissemination	18
Focus Area G – Education and Training	20

\$19,134,801 in funding was approved on June 6, 2002. In the award letter from HHS, three priorities were identified:

1. The need for detailed plans for receipt of material from the National Pharmaceutical Stockpile and plans in each regional area for the vaccination or distribution of antibiotics to the entire population within a matter of three to five days.
2. Plans need to be made in each hospital region to accommodate a sudden surge of 500 acutely ill patients.
3. All hospitals should make provision for isolation rooms in their ERs, in particular, for any suspect smallpox case and all febrile patients with rash who might possibly be developing the disease and could spread it to others.

Focus Area A: Preparedness Planning and Readiness Assessment
(5 Critical Capacities – 7 Benchmarks)

I. Strategic Direction, Coordination and Assessment

Critical Capacity #1: *To establish a process for strategic leadership, direction, coordination, and assessment of activities to ensure state and local readiness, interagency collaboration, and preparedness for bioterrorism, other outbreaks of infectious disease, and other public health threats and emergencies.*

Critical Benchmark #1: *Designate a senior public health official within the state health department to serve as executive director of the bioterrorism preparedness and response program.*

Under the direction of Howard Koh, MD, MPH, Commissioner of Public Health, the Massachusetts Department of Public Health (MDPH) has identified three senior-level employees with experience in emergency preparedness and response to serve as directors of the bioterrorism preparedness and response program: **Alfred DeMaria, MD, Ralph Timperi, MPH, and Nancy Ridley, MS.**

Critical Benchmark #2: *Establish an advisory committee including representation from (but not limited to the following groups: a. state and local health departments and governments; b. emergency management agencies; c. emergency medical services; d. the office of rural health; e. law enforcement and fire departments, emergency rescue workers, and occupational health workers; f. other healthcare providers including university, academic, medical, and public health; g. community health centers; h. red cross and other voluntary organizations; i. the hospital community (including Veterans Affairs and military hospitals where applicable).*

The Department of Public Health has convened a Statewide Bioterrorism Preparedness and Response Program Advisory Committee. The Mission of the Advisory committee is to ensure the appropriate and effective investment of federal resources in a state and local public health system infrastructure that can sustain capabilities for public health preparedness and response to bioterrorism, infectious disease emergencies, and other public health threats and emergencies; and to develop and maintain active partnerships with public safety agencies, hospitals, and other entities that are part of the broad coalition needed for timely and effective response to and management of public health emergencies including bioterrorism.

Critical Capacity #2: *To conduct integrated assessments of public health system capacities related to bioterrorism, other infectious disease outbreaks, and other public health threat and emergencies to aid and improve planning, coordination, and implementation.*

Critical Benchmark #3: *Prepare a timeline for the assessment of emergency preparedness and response capabilities related to bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies with a view to facilitating planning and setting implementation priorities.*

In collaboration with local public health agencies, the MDPH will facilitate a comprehensive statewide assessment providing information on existing capabilities and capacities, and identifying gaps to the MDPH to utilize in its overall emergency preparedness planning efforts. The assessment will benchmark the state of current capabilities within the Commonwealth's public health system, and compare this capacity to a standard of required capabilities that will be determined.

The MDPH will review results of existing assessments in order to avoid duplication and redundancy of efforts. An essential tool will be the coordination of efforts between the Department of Justice/CDC Public Health Performance Assessment for emergency Preparedness. Initial DOJ/CDC survey results demonstrate an immediate need for the development of medical management protocols, public information dissemination protocols, and the review and compilation of laws and regulations (including the identification of local legal issues. Additionally, The MDPH is partnering with the Massachusetts Hospital Association in developing a survey of all hospitals in the Commonwealth regarding their current capacities. The results from these assessment tools are vital first steps that will help determine the response capabilities of the state and local public health infrastructure.

Critical Benchmark #4: *Prepare a timeline for the assessment of statutes, regulations, and ordinances within the state and local public health jurisdictions that provide for credentialing, licensure, and*

delegation of authority for executing emergency public health measures, as well as special provisions for the liability of health care personnel in coordination with adjacent states.

The MDPH has been reviewing the current statutory authority with respect to authorization for health care personnel to execute emergency public health measures, and liability protections for these individuals as well as those included in the Model Health Powers Act, and a bill filed in the state legislature based on this Act. Existing assessments of the public health system's capacity to determine response status of the state and local public health systems will be incorporated in this review.

This review will include:

1. Review current emergency public health measures
2. Review liability provisions for healthcare personnel
3. Contract with agencies for information
4. Contact Massachusetts Hospital Association on multi-state credentialing of physicians
5. Research development of reciprocity agreements
6. Determine need for statutory authority
7. Develop recommendations for statutory authority
8. Access changes needed for multi state credentialing
9. Develop recommendations for liability of healthcare personnel

II. Planning for Preparedness and Response

Critical Capacity #3: *To respond to emergencies caused by bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies through the development and exercise of a comprehensive public health emergency preparedness and response plan.*

Critical Benchmark #5: *Prepare a timeline for the development of a statewide plan for responding to incidents of bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies. This should include the development of emergency mutual aid agreements and/or compacts, and provision for regular exercises that test regional response proficiency.*

The statewide assessment finding will help lay the framework for determining planning priorities for the MDPH. A comprehensive planning process will consist of identifying particular areas that need to be addressed and a prioritization of activities to be undertaken. Current emergency preparedness activities initiated by the MDPH have been categorized into the four phases of emergency management: Mitigation, preparedness, response, and recovery. The statewide plan will address critical issues such as the development of mutual aid agreements and or compacts with the Commonwealth's five bordering states and the provision of regular exercises that test regional response proficiency.

Critical Benchmark #6: *Prepare a timeline for the development of regional plans to respond to bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies.*

A coordinated hospital/EMS/outpatient local health regional planning process will address critical issues such as the development of mutual aid agreements and /or compacts between local jurisdictions and the provision of regular exercises that test regional response proficiency.

The following is a timeline for the development of regional plans for responding to incidents of bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies:

1. Define regions
2. MDPH approval of boundaries and objectives
3. Submit funding requests to MDPH
4. Regional hiring - coordinators
5. MDPH provide training and planning guidance to regions
6. Review results of assessment capabilities

7. Determine priority planning
8. Review recommendations for future planning
9. Meet with MDPH and Committees

Related actions include:

- The Designation of lead coordinators
- An assessment of the readiness of hospitals and EMS
- The establishment and maintenance of a 24/7 notification system
- Annual plans to demonstrate a proficiency in responding to bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies.
- Review of emergency plans and procedures
- Identification of additional resources
- Assessment of vulnerabilities
- Development of capacity within State and Local jurisdictions
 - Identifying emergency response coordinator
 - Developing communications systems
 - Delivery of critical services & effective medical management
 - Participating in existing unified command structure

Critical Capacity #4: *To ensure that state, local, and regional preparedness for and response to bioterrorism, other infectious outbreaks, and other public health threats and emergencies are effectively coordinated with federal response assets.*

Critical Benchmark #7: *Develop an interim plan to receive and manage items from the National Pharmaceutical Stockpile, including mass distribution of antibiotics, vaccines, and medical material. Within this interim plan identify personnel to be trained for these functions.*

The MDPH, working in conjunction with the Statewide Bioterrorism Preparedness and Response Program Advisory Committee, will oversee receipt and management of the CDC's National Pharmaceutical Stockpile in Massachusetts. MDPH will seek CDC's technical assistance in overseeing receipt and management of NPS assets in Massachusetts. In the event of a suspected biological or chemical terrorism or other incident, the Commissioner of Public Health or his/her designee will work with CDC, the Governor's office, MEMA and regional and local officials, including Metropolitan Medical Response Systems (MMRSs) where applicable, to assess the need to request NPS Program assistance and to activate plans for the management of said assets. The commissioner or the designee will be the state's authorized receiving authority for NPS assets and is so authorized to sign the NPS Program transfer form. Current state emergency response plans have built in redundancies for designated authorities and for communications with said authorities. The Commissioner and certain designees are registered with the Drug Enforcement Administration and the state to possess controlled substances. The Massachusetts Port Authority will provide the primary transportation and cargo infrastructure to receive and temporarily store NPS assets delivered by land or air for transport to Massachusetts' custody. The Commissioner or the designee will oversee distribution of NPS Assets. MDPH, working with MEMA, will determine regional and local needs for NPS assets in accordance with CDC guidelines. For treatment of symptomatic populations, MDPH will transfer custody of certain of the NPS assets to affected hospitals, clinics, emergency medical services, other licensed sites and/or MMRSs, where applicable. The National Guard will provide resources for transporting NPS assets from Logan or the Port of Boston to regional and/or local staging areas.

To ensure that preparedness and response planning is coordinated within the existing emergency management infrastructure that is facilitated and supported by the Federal Response Plan, MMRS, DMATs, DMORTs, and the HRSA hospital program, a fulltime Public Health Liaison position will be funded at the Massachusetts Emergency management Agency (MEMA). Emergency preparedness staff at both the state and local levels will participate in federally sponsored exercises.

III. National Pharmaceutical Stockpile Preparedness

Critical Capacity #5: *To effectively manage the CDC National Pharmaceutical Stockpile (NPS), should it be deployed – translating NPS plans into firm preparation, periodic testing of NPS*

preparedness, and periodic training for entities and individuals that are part of NPS preparedness.

MDPH will utilize CDC cooperative agreement funding to develop and implement a statewide NPS preparedness infrastructure. The statewide NPS infrastructure will be fully integrated with the statewide bioterrorism preparedness and response program, and with the HRSA Hospital Preparedness Program. This infrastructure will be implemented by the hiring of a statewide NPS coordinator and two regional NPS coordinators. As part of the comprehensive statewide assessment of emergency preparedness and response capabilities, the statewide NPS Coordinator will oversee the conduct of a statewide capacity and needs assessment for NPS asset management. The statewide NPS coordinator will arrange for the orientation, training and exercise of the regional NPS coordinators. The statewide NPS coordinator will also work with the Information Technology Specialist to oversee the development of an information technology infrastructure to track NPS assets as well as emergency response teams and support systems.

The following is a list of the necessary preparedness activities to ensure proper implementation of the Statewide NPS infrastructure:

- a. Develop infrastructure to manage NPS
- b. Provide fiscal support to local & regional governments
- c. Management plan for NPS-considerations in Version 9 of the CDC's guidance document
- d. Development of NPS individuals or entities
- e. Develop an antibiotic or chemical agent antidote distribution plan

Focus Area B – Surveillance and Epidemiology Capacity

(4 Critical Capacities - 2 Benchmarks)

Critical Capacity #1: *To rapidly detect a terrorist event through a highly functioning, mandatory reportable disease surveillance system, as evidenced by ongoing timely and complete reporting by providers and laboratories in a jurisdiction, especially of illness and conditions possibly resulting from bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies.*

Critical Benchmark #8: *Prepare a timeline for developing a system to receive and evaluate urgent disease reports from all party of your state and local public health jurisdictions on a 24-hour per day, 7-day per week basis.*

MDPH staff is available to accept urgent disease reports 24 hours a day / 7 days per week. Normally, this occurs through the Division of Epidemiology & Immunization. After hours, a rotation of epidemiologists and physicians is on call. In the future, the Health Alert Network (HAN), in combination with the NEDSS initiative will allow for electronic reporting by laboratories, health care providers and local public agencies. The MDPH proposes to explore the use of an after hour answering service. The MDPH state Laboratory Institute (SLI) is developing an Integrated Information System (SLIS), that will include the use of a patient-based database, electronic reporting and laboratory data interchange using web based functionality and between the "Bureau of Communicable Disease Control and other private government clients.

Proposed actions include:

1. Assessment of current system
2. Improvement of 24/7 communications
3. Integrated information system pilot initiated

To ensure legal authority, to require and receive reports on and investigate any suspect cases, potential terrorist events, or unusual illness clusters, the MDPH Division of Epidemiology and Immunizations has recently published the *Guide to Surveillance and Reporting*. The MDPH has done this to help guide local public health agencies through specific surveillance and reporting responsibilities for the diseases currently reportable to the MDPH. The MDPH has also developed and published (in 1997) *the Food borne Illness Investigation and Control Reference Manual* to assist local public health agencies in the identification, reporting and investigation of Food borne illness. As timeliness and completeness assignments are completed, deficiencies will be identified. Those local public health agencies not meeting the newly developed acceptable standards for timeliness and completeness of reporting will be offered assistance in improving their capacity. The year round sentinel provider system for influenza will be enhanced.

An assessment of capacities associated with monitoring dermatological conditions/rash illnesses will be conducted and plans developed to improve this component of the surveillance system. The Massachusetts Immunization Program currently does rash surveillance for measles, rubella and varicella. Current surveillance for rash illness include; (1) routine investigation of within twenty four hours of suspect cases, (2) confirmed cases of measles and rubella are closely followed to determine susceptible contacts and to make recommendations for control and prevention, (3) Specimens from patients with maculopapular rashes are sent to the SLI for testing, (4) Unusual presentations of varicella, are reported and investigated. To meet the proposed objectives of the MDPH the following measures will be made:

1. Increase number of reportable disease
2. Establish reporting parameters
3. Assess reporting enhancement
4. Assessment of surveillance reporting available
5. Plan development for additional reporting enhancements

To ensure sufficient epidemiological staffing capacity to manage the reportable disease system at the state level epidemiological capacity has been increased in recent years as a result of the Epidemiology and Laboratory Capacity cooperative agreement and the present BT Preparedness cooperative agreement. To keep up present staffing levels, which are sufficient to handle the control and investigation of most naturally occurring communicable diseases, all personnel presently supported on the current cooperative agreement will continue to

be supported. At the local level, public health nurses (in Massachusetts) perform most epidemiological response and many local public health agencies have allocated sufficient resources to manage such response adequately.

In Massachusetts, there are over 300 local health agencies with varying levels of resources and population. Because a bioterrorist even would overwhelm even the most prepared state or local public health agency, response to infectious disease emergencies could benefit from mutual assistance arrangements, similar to those in effect for fire departments, wherein assistance is requested of neighboring communities during disasters.

To ensure the competence of epidemiological staff, the necessary supplies, equipment, and training in epidemiology, surveillance, and interpretation of clinical and laboratory information, will be provided. Current staff members, including those funded from the current BT cooperative agreement, have access to training opportunities and are supplied with necessary equipment to fulfil their duties. In addition, staff epidemiologists with laboratory experience provide training on the interpretation of clinical and laboratory information.

Critical Capacity #2: *To rapidly and effectively investigate and respond to a potential terrorist event as evidenced by a comprehensive and exercised epidemiological response plan that addresses surge capacity, delivery of mass prophylaxis and immunizations, and pre-event development of specific epidemiological investigation and response needs.*

Critical Benchmark #9: *Assess current epidemiological capacity and prepare a timeline for achieving the goal of providing at least one epidemiologist for each Metropolitan Statistical Area (MSA) with a population greater than 500,000.*

Massachusetts has a population of approximately six million people but only one MSA. With the additional staffing that is proposed under Focus area B, Critical Capacity (1), MDPH will have sufficient capacity to provide one epidemiologist for every 500,00 citizens across the state. Discussions will be held with local public health agencies to determine if epidemiological resources should be more readily available on a regional basis.

To ensure that a full-time response coordinator for bioterrorism has been designated at the appropriate state and/or local levels, a Bioterrorism Program Coordinator for the MDPH Bureau of Communicable Disease Control has been funded throughout the existing cooperative agreement since 1999. The responsibilities of this position have been to coordinate BT activities with existing infrastructure for surveillance and epidemiology program activities and other CDC programs and also to assist the state response coordinator. To meet its objectives, the MDPH will hire a full time emergency preparedness coordinator.

Working with local public health agencies, the MDPH will coordinate all epidemiological response-specific planning with hospital preparedness activities being facilitated by the Health Resources Services Administration. Meetings have been held with representatives of local public health agencies regarding various BT related response issues including epidemiological response concerns. An assessment of local public health response capacity is planned which will include the epidemiological response capabilities of local public health agencies. Epidemiological response related deficiencies will be addressed through a coordinated statewide approach with extensive input of local public health agency planning groups.

To ensure the performance of risk and vulnerability assessments of food and water, to include assessments of production, processing, and/or distribution facilities the following steps are being taken:

1. Fiscal support to DFA and DFD for biosafety coordinators
2. Fiscal support to DFA for veterinary medical equipment
3. Fiscal support to DDA and DFD for IT equipment
4. Fiscal support to DFA and DFD to amend regulations and statutes
6. Development of enhancements to reduce vulnerability
7. Implementation of enhancements to reduce vulnerability
8. Evaluation of MA water supply vulnerability
9. GIS mapping of public water supplies
10. BT containment of water supplies and decontamination procedures

Critical Capacity #3:

To rapidly and effectively investigate and respond to a potential terrorist even, as evidenced by ongoing emergency public health interventions such as emergency chemoprophylaxis or immunization activities.

Achieve an around-the-clock capacity for immediate response to reports of urgent cases, outbreaks, or other public health emergencies, including any events that suggest intentional release of a biologic agent. (see Critical Capacity #1)

To assess the adequacy of state and local public health response to outbreaks of disease and other public health emergencies, the MDPH acts collaboratively with local public health agencies for many jurisdictions. The Department of Justice carried out a survey over the past two years to help assess the local capacity for response. Out of 110 public health agencies approached, 97 participated. In the future, the MDPH will facilitate a comprehensive statewide assessment of response capabilities related to BT.

With oversight by the Department of Food and Agriculture, many of the 351 town in MA have town-appointed animal inspectors which have played critical roles in rabies prevention. To assess and strengthen links with animal surveillance systems and the animal health community, a rabies advisory committee was formed, in 1992, to help shape the rabies response plan for Massachusetts. As a result of the Rabies Advisory Committee, statutory changes were made to strengthen the state's rabies control plan and compulsory rabies vaccination of dogs and cats. In conjunction with the MDPH, MEMA and other state agencies, the Department of food and Agriculture has developed an emergency response plan for deficiencies.

With over 300 local public health jurisdictions it would be difficult to ensure sufficient staff response to urgent cases, disease outbreaks, and public health emergencies absent a regional approach. state, with all areas reachable within 2-3 hours.

Enhanced Capacity: to rapidly detect and obtain additional information about bioterrorism, other infectious disease outbreaks, or other public health threats or emergencies by accessing potentially relevant pre-existing data sets outside the health department, or through the development of new active or sentinel surveillance activities.

Activity #1:

The continued development and evaluation of syndromic surveillance for the early detection of BT events using an HMO's electronic medical record and pharmacy information system data (currently in second full year of current cooperative agreement).

The maintenance and development of the existing daily reporting system that uses internet based graphical and statistical methods for reporting the frequency of eight syndromes of public health interest will be continued. Better signal detection methods for a wide range of illnesses will be developed with the input of the MDPH. This work will address the different expected presentations of various syndromes. In addition, simulation tools will be developed to help provide early warnings of BT attacks and other acute health events will also be developed.

Investigators at the Harvard Medical School Department of Ambulatory Care and Prevention have developed a real-time automated system that reports daily visits for general symptoms among 10% of residents (of a region of eastern Massachusetts). The intended use of this reporting system is to identify possibly BT events and more generally clusters of acute illness in the greater Boston area. A model to identify unusual temporo-spatial clusters that may be an early indicator of a BT even has been developed. The model, based on Generalized Linear Mixed Model theory can detect a very localized occurrence of bioterrorism: even two or three additional cases in a neighborhood will likely cause the suspicion of unnatural illness.

Activity #2

The Boston Public Health Commission (BPHC) is currently in the third year of a project funded through this cooperative agreement with the following components:

- volume based surveillance in Boston EDs
- Monitoring of EMS calls in Boston
- Poison control surveillance
- Mortality rates in Boston and unusual causes of death

Objectives of this project include:

1. Continued syndromic surveillance
2. Continued cooperative agreement with BPHC
3. Programming and data collection - GIS mapping design phase
4. Alert system implemented -GIS pilot testing -data collections established
5. GIS mapping completed, cluster GIS designed, educational lectures
6. Cluster testing from GIS, website and data collection enhancements
7. GIS cluster in use, volume based surveillance

Activity #3:

The extension of the Boston Public Health Commission (BPHC) model of volume-based surveillance to the greater Boston area.

To help meet the threat of bioterrorism, the Cambridge Department of Public Health (CDPH) has joined with the BPHC in installing the Emergency Room surveillance Program to area hospitals. This program seeks to detect possible BT events by tracking hospital emergency room utilization and flagging any unexpected spikes in volume.

Activity #4:

Development of a statewide pediatric, emergency department-based, syndromic surveillance system for the early detection of bioterrorism events.

Children can be particularly vulnerable during a BT attack. Specialized surveillance systems would ensure the early detection of pediatric victims. Children's Hospital Boston provides over 60% of the emergency care to children in Boston, thereby making it a unique site for monitoring surveillance data. During the first year of proposed work, CHB will build a production grade system to establish a reliable linkage, with real time information flow between two hospitals and the MDPH. This system will detect surges in-patients presenting with respiratory syndromes to EDs, relying on patterns in time (day and season of visit) and in space (home address). In subsequent years, additional hospitals across the state will be added.

In accordance with this activity the following steps are planned:

1. Assessment of 4 additional reporting hospitals
2. Automated data collection at CHB
3. Automated data collection at BIDMC
4. Integration of additional sites
5. Web data secured for view by MDPH
6. Automated alert strategy implemented
7. System performance evaluated and tested

Activity #5:

Use of multiple delivery systems serving overlapping populations for surveillance of acute health events.

Investigators at the Harvard Medical School and Harvard School of Public Health will integrate the signal detection and reporting capabilities of existing separate real-time systems for identifying unusual clusters of BT and other acute health events, and also to improve the efficiency of reporting to the MDPH. The fundamental aim of the project is to improve the ability to detect changes in the incidence of potential BT-related syndrome episodes in the population of metropolitan Boston.

Focus Area C – Laboratory Capacity – Biologic Agents Massachusetts State Laboratory Institute

(1 critical capacity; 1 benchmark)

The components of the state Laboratory Institute (SLI) strategic plan for Public Health Preparedness and response for Bioterrorism (Focus Area C) are noted briefly as follows.

1. Develop and strengthen partnerships with clinical (Level A), Community Health Center and university laboratories; collaborative regional and local structures; infectious disease practitioners; local health agents and public safety professionals by providing training, communicating regularly through meetings, newsletters and websites and initiating collaborative projects.
2. Improve facility biosafety and security and specimen retrieval and delivery systems to strengthen testing capability and capacity, and assure resources for jurisdiction-wide and regional testing and training.
3. Increase the number of expert staff, and implement intensive cross training of critical staff.
4. Accelerate current development and implementation of a secure web-based remote order entry and rapid results reporting Laboratory Information System for electronic communication between SLI and state, local or federal surveillance programs, FBI and public safety agencies and level A Laboratories.
5. Acquire, validate and maintain necessary equipment to support high volume timely testing in improved BSL-3 areas.
6. Develop new test methods and validate methods for BT agents to support the LRN and implement these procedures at SLI.
7. Provide regional services and assistance as needed to other states, including development and delivery of laboratory training programs, provision of specialized testing services, such as smallpox identification, and provision of surge capacity testing for LRN.

Critical Capacity A (Laboratory Service):

To develop and implement a jurisdiction-wide program to provide rapid and effective laboratory services.

Critical Capacity A1

SLI will enhance its plans to improve and strengthen established relationships between Level laboratories and Level B/C laboratories. (Critical Benchmark 10)

- SLI provides a wet-label training module for Level A Laboratories in procedures for current protocols to rule out critical BT agents. One microbiologist from 64/95 clinical laboratories has been trained as of March 2002.
- SLI moderates an Epi-X forum for clinical microbiology laboratories.
- SLI provides reference testing services to clinical laboratories for bacterial and viral isolates, which encourages timely submission of unusual organisms including suspect agents of concern, such as *Brucella* species, *F. tularensis* and *B. anthracis*.
- SLI provides a testing services manual online to aid in proper specimen and test selection.
- SLI provides packing and shipping of infectious agents 'train-the-trainer' course through the Northeast Office of the NLTN.

Assessment of Adequacy (A1) This component requires continual improvement and increased resources in order to strengthen capabilities of Level A Laboratories, to expand training and education to include community health center laboratories and university laboratories and to aid communication.

Proposal for Effecting Improvements (A1) In order to implement improvements described here, two additional FTE positions will be required; one Bacteriologist II and one Administrative Assistant I for the Training Program.

Critical Capacity A2

Assure an integrated response plan that directs how the laboratories within our jurisdiction will respond to a bioterrorism incident.

- Roles and responsibilities have been defined for a core group of SLI staff who are reassigned as needed during a BT event, and laboratory staff are placed on an extended work day and weekend schedule; in addition a BT Lab Staff person and the Laboratory Director or designee are on 24/7 call.
- SLI provides testing services to other New England states for certain agents such as, botulism toxin and arboviruses; for PFGE analyses for selected bacterial pathogens; and for surge capacity testing.

- SLI plans are integrated with Massachusetts Emergency Management Agency (MEMA) ESF-8 and integrated with department-wide emergency response efforts as described in other Focus Areas (e.g., A and B).
- Specimen transport protocols currently are in place, and at least one microbiologist in every SLI section has been trained and validated in the proper procedures for packaging and shipping specimens. Approximately 75 microbiologists in hospital and clinical laboratories have been trained in the IATA regulation and have received SLI certification for packaging and shipping infectious specimens by air or ground.
- Result reporting is accomplished by SLI personnel and/or state epidemiologists, depending on the disease/test report, during and after normal business hours by telephone, fax and mail.
- SLI has developed procedures and protocols for telephone, fax and U.S. mail result reporting to law enforcement and public safety agencies.
- SLI is currently developing an Integrated Information System (SLIS). Which will electronically link SLI, the Bureau of Communicable Diseases and clinical laboratories.

Significantly greater efforts are required to develop, implement and train additional laboratory personnel, both at SLI and Level A Laboratories to assure 24/7 testing on a sustained basis' to increase collaborations with university, clinical and other state public health, environmental, agricultural, veterinary and water laboratories, and speed implementation of secure electronic laboratory reporting. In addition, result reporting between clinical laboratories and SLI between SLI and the State Surveillance and Epidemiology Program should be more efficient.

Critical Capacity A3

Enhance relationships with HazMat, First Responders, and FBI to provide laboratory support for their response to bioterrorism including environmental testing and chain of custody procedures.

- SLI has a 24/7 on-call pager system for laboratory staff that can be accessed through MEMA, the Boston Office of the FBI, the State Fire Services Office, City HazMat Teams (Boston, Cambridge, Springfield and Worcester) and the 24/7 State Laboratory Institute telephone number (617-522-3700).
- SLI has developed an educational program and presents information on laboratory procedures and capabilities, e.g., at 5 statewide regional meetings for local health, police and fire department personnel.
- Protocols and forms were developed with the input of the First Responder Community for submission of environmental specimens, including chain of custody procedures.
- SLI has the capacity to support the First Responder Community by providing environmental testing.

The SLI has adequate capacity to respond in a timely manner to low and medium volume test request situations; however, high-volume test request situations overwhelm current capacity. In addition, the chain of custody system needs to be improved.

Critical Capacity A4

Enhance relationships with community laboratory practitioners, university laboratories, and Infectious Disease (ID) physicians.

- SLI is distributing a reference manual of SLI laboratory procedures for the identification of BT agents to the Chiefs of Infectious Diseases at hospitals.
- SLI has placed protocols and procedures for ID physicians on the Massachusetts ID Society Website and distributed these through hospitals to describe selection, collection and shipment of appropriate specimens for diagnosis of BT agents.
- The State Epidemiologist meets frequently with infectious disease practitioners at Massachusetts Medical Society Meetings and coordinates presentations of information on BT agents and diseases, including testing and diagnosis.
- State Laboratory Director and State Epidemiologist hold regular monthly conference calls with hospital infectious disease and emergency room practitioners through their consortia and professional organizations, e.g., Cambridge Health Alliance.

Relationships with community laboratory practitioners, university labs and ID physicians have been continually improved, but the rate of improvement must be accelerated to respond effectively to high-impact emergencies. In order to enhance existing relationships with statewide health professionals, SLI must implement a major training and education initiative and will develop and implement joint seminars and presentations with appropriate professional organizations.

Critical Capacity A5

Implement protocols and procedures for collection and shipment to CDC of blood and urine specimens related to chemical exposures.

The SLI has an Environmental Chemistry Laboratory with expertise and experience in the collection, shipment and analysis of biological specimens for chemical analyses. Protocols and procedures for collection of appropriate specimens for detecting human exposure to chemical bioterrorism threat agents are not in place. Current SLI shipping protocols and procedures are appropriate. The CDC protocols and procedures for collection of appropriate specimens will be implemented by September 2002.

Critical Capacity B (Laboratory Infrastructure):

As a member of the LRN, SLI will ensure adequate and secure laboratory facilities, reagents, and equipment to rapidly detect and correctly identify biological agents likely to be used in a bioterrorist incident.

Critical Capacity B1

SLI will ensure the development of protocols for specimen transport and handling, worker safety, appropriate BSL working conditions for each threat agent, staffing and training of personnel, quality control and assurance, internal and external proficiency testing, triage procedure for prioritizing intake and testing of specimens before analysis, secure storage of critical agents, and appropriate levels of supplies and equipment needed to respond to disease outbreaks or bioterrorism events with an emphasis on surge capacities needed to effectively respond to a bioterrorism incident.

- Existing protocols are in place for the transport and handling of infectious disease and bioterrorism specimens. SLI has an in house training program that includes competency assessment.
- Worker safety is assured through on-the-job training (OJT) and competency assessment for each SLI employee before they are cleared for handling infectious substances. OJT is supplemented with annual courses on safety.
- SLI has initiated upgrades of BSL3 working areas dedicated to bioterrorism work.
- A team of employees is competent to manage testing, proficiency testing and maintenance of equipment required for BSL3 threat agents.
- QA/QC protocols and procedures are completed and updated as new methods/agents are made available.
- Proficiency Testing is completed, as new test panels are made available.
- Specimen triage protocols and an SLI intranet application have been developed to address the level of confidentiality and priority of individual bioterrorism specimens as well as the number of total specimens.
- SLI has instrumentation for performing molecular assays and other test methods related to BT agents, as well as infectious agents. These include a Smart Cycler, a Light Cycler and the Bene Amp 5700. Supplies are available for methods protocols that are completed and updated.
- SLI has begun planning with other Massachusetts agencies that have laboratory capabilities, including the Massachusetts Water Resources Agency (MWRA), Massachusetts Department of Environmental Protection (DEP) and other Executive Office of Environmental Affairs agencies, the Massachusetts Department of Agriculture and the State Medical Examiner, to assess the needs for methods development, testing services for surveillance and for response to suspect contamination, training and education and communication capabilities.
- SLI currently tests specimens for the Bureau of Animal health for infectious zoonotic agents such as rabies, WNV, EEEV as well as TB and other agents.

The current BSL-3 area is not adequate to handle high throughput of specimens such as experienced during the recent anthrax scare. In addition, further improvements in the air handling system for BSL-3 areas are needed. In order to meet the criteria of this component, SLI must augment and enhance BSL working conditions, staffing and training, QA/QC, triage procedures, and equipment and supply stocks, as well as identify surge capacity at other laboratories within Massachusetts and neighboring states. SLI does not currently provide parasitological testing for the state.

Critical Capacity B2

Ensure capacity exists for LRN-validated testing of current and future Category A threat agents.

SLI staff has been trained at CDC training programs and has subsequently trained additional staff at SLI. Staff has completed training for all conventional test methods and for available rapid test methods.

SLI has expertise in conventional and rapid test methods, but has limited numbers of staff in critical positions and needs to train additional staff. SLI will increase staff depth by training additional current staff and by hiring and training additional staff in the current and next Cooperative Agreement period.

Critical Capacity B3

SLI will ensure that at least one public health laboratory in its jurisdiction has appropriate instrumentation and appropriately trained staff for performance of PCR and TRF rapid assays.

SLI currently has the ability to perform PCR and TRF for BT-related agents following approved protocols that are available through the CDC and the LRN. Necessary equipment is available for PCR assays and has been ordered for TRF. Staff has been trained at CDC for PCR and TRF assays. Capability and capacity are adequate for low volume events and for timely testing of high priority specimens. Additional staff, training, and equipment will be necessary in order to maintain the current capacity as well as expand testing to a larger selection of organisms and increase testing capacity for high volume testing demands (surge capacity).

Critical Capacity B4

SLI will conduct at least one simulation exercise per year that specifically tests laboratory readiness and capability to detect and identify one or more Category A list threat agents.

SLI has not conducted a simulation exercise to test laboratory readiness; therefore a formal evaluation by simulated exercise has not been developed. Beginning October 2002, the SLI BT Laboratory Coordinator will identify and work with the Northeast University Collaborative Initiative to develop a simulated exercise program in conjunction with DPH, the Massachusetts Medical Society, MEMA, and the collaborative local and regional structures, to carry out a statewide multi-site drill with downlink observation no later than August 2003. This will include Level A Laboratories and local first responders.

Critical Capacity B5

Ensure at least one BSL-3 facility in jurisdiction.

SLI has one BSL-3 area that includes appropriate security, functional separation of activities, appropriate BSCs, HVAC safeguards and pass-through autoclave. SLI has BSL2+ areas that are used for TB and other high-risk agents. The BSL-3 area has been unreliable due to downtime associated with HVAC problems. Even when functioning, the BSL-3 area provides inadequate capacity for specimen testing demand that is likely to occur in Massachusetts and neighboring jurisdictions in the case of a BT event or significant infectious disease outbreak.

By the dates noted here, improvements will be made to laboratories to assure adequate BSL-3 areas for Massachusetts and regional surge capacity and training: 1) SLI BSL-3 BT Laboratory air handling improvements by December 1, 2002; 2) Biocontainment equipment improvements to TB Laboratory by September 2003. Improvements to the TB Laboratory, a 1000 sq. ft. laboratory area that includes a general microbiology lab area with pass-through autoclave and 6 isolated BSC rooms, will provide adequate BSL-3 area to manage high-volume testing events as well as permit safe inspection and triage of specimens.

Critical Capacity B6

SLI will ensure that laboratory security is consistent, at a minimum with the guidelines set forth in BMBL appendix F.

SLI security procedures and facilities are consistent with guidelines set forth in BMBL appendix F. Currently, any specimen submitted by a HazMat team is screened for radiological, explosive and chemical risk; however, many specimens are submitted from other sources without the appropriate screening. Limited video surveillance of the SLI parking lot currently exists. Procedural and facility aspects of security are appropriate for current alert level response; however, higher alert level response will require more stringent procedural and facility related security capabilities. Risk assessment of suspect specimens is not consistently adequate.

Critical Capacity B7

Enhance electronic communications within the LRN to enable capacity monitoring sentinel surveillance, proficiency-testing support, multi-center validation studies, and support for future enhancements.

- SLI has adequate capability to communicate to LRN via the Internet, fax and telephone (land lines, cellular and Nextel)
- SLI participates in method validation studies.
- SLI participates in proficiency-testing programs.

The SLI has significant capability and capacity for participation in validation studies, and information systems development. SLI maintains regular communications with the LRN and supports all functions of the LRN. Response time for network failure must be timelier.

Critical Benchmark #10

The Massachusetts State Laboratory Institute will ensure effective working relationships and communication between Level A (clinical) laboratories and higher level laboratories as indicated in the following timeline.

As of April 2002,

- SLI provides a lecture and wet-lab training module for Level A Laboratories in procedures for current protocols to rule out critical BT agents. One microbiologist from 64 Of 95 clinical laboratories has been trained.
- SLI provides a testing services manual on line to aid in proper specimen and test selection and continually updates this manual, as new testing services become available.
- SLI moderates an Epi-X forum for clinical microbiology laboratories.
- SLI provides reference testing services to clinical laboratories for bacterial and viral isolates, which encourages timely submission of unusual organisms including suspect isolates and BT agents.
- SLI provides packaging a shipping of infectious agents; train-the-trainer' course through the Northeast Office of the NLTN. Approximately 75 microbiologists in hospital and clinical laboratories have been trained in the IATA regulations and have received SLI certification for packaging and shipping infectious specimens by air or ground.
- July 2002, provide packaging and shipping of infectious agents 'train-the-trainer' course through the Northeast Office of the NLTN.
- August 2002, initiate development of training course for specimen collection and laboratory test interpretation for nurses.
- September 2002, begin accelerated schedule of training in Level A protocols for 8-16 students per session, including those from additional hospitals and multiple staff members from the original hospitals.
- October 2002, begin training for 10-15 public health and hospital nurses per session regarding specimen collection and laboratory test interpretation for BT agents as well as for appropriate collection of biological samples following a suspect chemical terrorism event.
- October 2002, hold Level A protocols training course.
- October 2002, provide packaging and shipping of infectious agents 'train-the-trainer' course through the Northeast office of the NLTN.
- November 2002, hold Level A protocols training course.
- December 2002, hold level A protocols training course.
- January 2003, hold level A protocols training course.
- January 2003, hold training course for nurses.
- January 2003, provide packaging and shipping of infectious agents 'train-the-trainer' course through the Northeast office of the NLTN.
- February 2003, hold Level A protocols training course.
- March 2003, hold Level A protocols training course.
- By March 2003, develop and initiate training programs for community health center laboratories and physicians to assist in collection of appropriate specimens and interpretation of laboratory test results for BT agents.
- April 2003, hold Level A protocols training course.
- April 2003, hold training course for nurses.
- April 2003, provide packaging and shipping of infectious agents 'train-the-trainer' course through the Northeast office of the NLTN.
- May 2003, hold level A protocols training course.
- June 2003, Hold Level A protocols training course
- June 2003, develop and initiate training programs for community health center laboratories and physicians.

- July 2003, hold Level A protocols training course.
- July 2003, hold training course for nurses.
- July 2003, provide packaging and shipping of infectious agents 'train-the-trainer' course through the Northeast office of the NLTN.
- August 2003, hold Level A protocols training course.

Focus Area E: Health Alert Network/Communications and Information Technology
(4 Critical Capacities – 2 Benchmarks)

Critical Capacity #1: *To ensure effective communications connectivity among public health departments, healthcare organizations, law enforcement organizations, public officials, and others as evidenced by: a) continuous, high speed connectivity to the Internet; b) routine use of e-mail for notification of alerts and other critical communication; and c) a directory of public health participants (including primary clinical personnel), their roles, and contact information covering all jurisdictions.*

Critical Benchmark #11 *Prepare a timeline for developing a plan that ensures that 90 percent of the population is covered by the Health Alert Network.*

Critical Benchmark #12 *Prepare a timeline for the development of a communications system that provides a 24/7 flow of critical health information among hospital emergency departments, state and local health officials, and law enforcement officials.*

Building on the critical benchmark above, the existing communication connectivity in Massachusetts will be assessed to determine whether this capacity is adequate.

Effective communications with local public health agencies and public health partners has been a top priority for the Massachusetts Department of Public Health (MDPH). Due to Massachusetts' unique public health structure with 351 independent jurisdictions, connectivity varies considerably. For critical alerts, the Department currently utilizes a broadcast fax/pager communication system (Broadcast Communicator) from which the majority of the local public health agencies may receive alerts. In addition, the majority of hospital emergency rooms, infection control personnel, infectious disease physicians, disaster coordinators and ambulance providers are accessible via this system. The current communications system is 24/7, unidirectional, and operated by the Division of Epidemiology and Immunization. Non-urgent information is sent via U.S. mail.

The current public health directory includes the following:

- Local public health agencies (local public health agents at the local boards of health) kept current through unidirectional communications originating at the local public health agencies.
- emergency room physicians kept current through monthly contacts at select hospitals
- ambulance personnel for one of six regions statewide kept current through constant phone communications
- select family physicians receiving vaccine directly from the Massachusetts Immunization Program

Initial analysis of the Department of Justice (DOJ) survey of local public health agencies indicated the need for health information communication system with redundant means of communication. The MDPH will provide technical support, software, and hardware, as necessary, to local public health agencies and public health partners in order to ensure effective communications connectivity. In addition the MDPH will engage local public health agencies to determine their needs for local communications and using the DOJ survey as a guide, develop and administer new survey to assess the local public health agencies' and public health partners' connectivity capacity.

Critical Capacity #2: *To ensure a method of emergency communication for participants and public health emergency response that is fully redundant with email.*

1. *Assess the capacity in your jurisdiction for redundant communication devices (two-way radios, cell phones, voice mail boxes, satellite phones, or wireless messaging), the capacity of existing systems at the state and local level to broadcast and/or AutoDial to automatically distribute alerts and messages to these devices, and the capacity to link to the emergency communication systems of local emergency response partners. If necessary, make improvements during this budget cycle.*
2. *Routinely assess the timeliness and completeness of the redundant method of altering as it exists to reach participants in public response.*

Due to Massachusetts' unique public health structure with 351 independent jurisdictions, the current response capacity varies considerably. In conjunction with local public health agency survey, the MDPH will work to assess local communication mechanisms, including fax machines, pagers, cell phones, voice mail boxes, satellite phones, wireless messaging and 2-way radio communication.

Critical Capacity #3:

To ensure ongoing protection of critical data and information systems and capabilities for continuity of operations.

- 1. Assess the existing capacity in your jurisdiction regarding policies and procedures for protecting and granting access to secure systems for the management of secure information, system backups, and systems redundancy. If necessary, develop a proposal for improvements during this budget cycle.*
- 2. Perform regular independent validation and verification of Internet security, vulnerability assessment, and security and continuity of operations practices, and rapidly implement recommended remedial activities.*

The MDPH currently protects personally identifiable disease-related information in secure, locked areas and databases. The functional requirements of the HAN detail infrastructure and applications to be used for the protection and controlled user authorization to data.

Critical Capacity #4:

To ensure secure electronic exchange of clinical, laboratory, environmental and other public health information in standard formats between computer systems of public health partners. Achieve this capacity according to relevant IT functions and specifications.

Assess the existing capacity in your jurisdiction to exchange electronic data in compliance with public health information and data elements exchange standards, vocabularies, and specifications as referenced in the NEDSS initiative. If necessary, develop a proposal for improvements during this budget cycle.

Ensure that the technical infrastructure exists to exchange a variety of data types, including possible cases, possible contacts, specimen information, environmental sample information, lab results, facilities, and possible threat information.

Regularly confirm the successful transmission and receipt of information to and from public health partners.

In early 2002, a Department-wide Data Standards Committee was established to review different industry standards and to develop Department-wide standards in regards to data storage transmission and format that are compliant with HIPAA, NEDSS and other federal standards, as appropriate. In 2002, MDPH will be implementing the NEDSS Base System which will allow for internal communication and exchange of information within the Bureau of Communicable Disease Control. Existing databases currently operate as silo systems with individual data standards and security functions. Currently the MDPH receives electronic exchange information from a few laboratories. Paper-based disease case management occurs at both local and state levels; while electronic data bases are used to capture related information at the state level.

Focus Area F: Risk Communication and Health Information Dissemination (Public Information and Communication)
(1 Critical Capacity - 1 Benchmark)

Critical Capacity:

To provide needed health/risk information to the public and key partners during a terrorism event by establishing critical baseline information about the current communication needs and barriers within individual communities, and identifying effective channels of communication for reaching the general public and special populations during public health threats and emergencies.

1. Develop an interim plan for risk communication and information dissemination to educate the public regarding exposure risks and effective public response.

The Commonwealth of Massachusetts has an existing plan and system for risk communication and information dissemination which is used regularly and which will benefit from a thorough evaluation and revision. In a disaster, the Massachusetts Department of Public Health is the designated state agency responsible for health and medical services (ESF 8) including assessment of health/medical needs, health surveillance and public health information, among many others.

Cities and towns in Massachusetts have a range of plans and systems for risk communications and health information, dissemination as well, which provide a starting point for assessment and revision. MDPH has developed a variety of methodologies aimed at effective communication of public health risks with the media, local health officials, the medical communities and the general public.

MDPH has a commitment to communicating health information to special populations. Translation of materials into dozens of languages, use of media other than print, use of interpreters, TDD, and other modes of communication ensure that health information is disseminated effectively throughout the Commonwealth. The Health Alert Network, and use of web-based, satellite and video conferencing technologies, promise to improve communication with key partners and local communities.

In the future, regionally based instructors will be trained in risk communication principles. Risk communication training will be offered to members of local boards of health, hospital staff, private providers, first responders, EMS and other public health practitioners in regional workshops and satellite programs. Senior public information officers from health departments, hospitals, EMS, other first responders and other health agencies will receive in-depth training on Risk Communication theory and best practices. The emerging role of the Health Alert Network and new technologies will be included as a component of these plans. An organizational chart of trained media spokespeople within each MDPH Bureau and in local health departments will be formalized. Regionally-based instructors will work with local agencies on reviewing and revising communications plans through the use of tabletop and functional exercises, in conjunction with HRSA-funded hospital preparedness programs and state and local media.

2. Conduct a needs assessment to evaluate the communication and information needs for health and risk information for public health threats and emergencies.

During the summer and fall of 2000, approximately 100 local boards of health participated in the Emergency Planning Needs Assessment.

When asked "For the jurisdiction served by your local public health agency, is there a network of support and communication relationships that includes health-related organizations, the media and the general public?" 96.8% responded "Yes."

When asked "In your jurisdiction, is the public regularly provided with information about current health status, health care needs, positive health behaviors, and health care policy issues?" 84% responded "Yes."

When asked "Within the past year in your jurisdiction has the local public health agency provided reports to the media on a regular basis?" 78% responded "Yes."

Comprehensive formative research, informed by partnerships with and input from public and private organizations, will identify communication and information needs for health and risk information. Training on risk communication, as described above, for state employees, other public health professionals, hospital staff, EMS, first responders and local public information officers, will be provided in regional workshops. Mental health and substance abuse issues that emerge during crises, and the impact on health communication, will be addressed in these trainings. Training, including functional exercises, will be coordinated with HRSA-funded hospital preparedness activities and state and local media. This research will be framed by principles of risk communication in an assessment of the strengths and weaknesses of the communications systems. The communication needs of special populations during emergencies will be assessed through this process.

3. Review appropriate risk communication strategies and resources from the private sector, the media, and federal emergency management sources, including the CDC Public Health Preparedness and Response Web site, other national Web sites, state/local Health Alert Networks, online and hard-copy "bulletin boards," hotlines and clearinghouses, and other tested communication strategies, and concepts. Develop a plan and implement effective channels of communication for reaching the general public and special populations during public health emergencies.

MPDH and community partners have used many communication strategies and resources successfully to respond to public health emergencies. Telephone hotlines, broadcast fax, daily Web updates, conference calls, satellite broadcasts, press releases, posts to health agency list serves, and town meetings have all been utilized. The development of the Health Alert Network will provide state-of-the-art emergency communication capability with key partners across the state.

To meet the challenges of public information and risk communication during public health emergencies including bioterrorism, the Office of Public Affairs will expand from the present staffing level of a single Director. Two communications experts with risk communication expertise (one to be based at the State Laboratory Institute) will be hired, along with a research assistant with skills in public health information technology. In addition, an administrative assistant will provide a more rapid and efficient interface with the print and electronic media.

The new Public Affairs staff will review risk communications strategies and resources and develop a statewide plan for effective communication with the general public and special populations during public health emergencies using multiple strategies and resources. This plan will incorporate the findings from the formative research and feedback from agencies impacted by the plan.

4. As part of the final plan, identify key public health spokespersons and ensure their competency, awareness, and ongoing training necessary to effectively communicate with the public and media to prepare for and respond to public health emergencies (especially in times of crisis).

MDPH has identified a cadre of public health spokespersons in senior management who communicate with the public during public health emergencies. Public information officers on the local level and at other agencies perform similar tasks. The training needs of this large group have not been assessed formally, and training in communication techniques for this group occurs rarely. A final statewide communications plan will be published, incorporating the results of formative research and the expertise of the Public Affairs staff, as well as input from local boards of health, regional collaboratives, hospitals, private health care providers, EMS, first responders and other public and private agencies. The needs of special populations and plan to address the needs of special populations will be addressed in this plan.

FOCUS AREA G: EDUCATION AND TRAINING
(1 Critical Capacity - 1 Benchmark)

Critical Capacity:

To ensure the delivery of appropriate education and training to key public health professionals, infectious disease specialists, emergency department personnel, and other healthcare providers in preparedness for and response to bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies, either directly or through the use of existing curricula and other sources, including schools of public health and medicine, academic health centers, CDC training networks and other providers.

Critical Benchmark #14:

Prepare a timeline to assess training needs—with special emphasis on emergency department personnel, infectious disease specialists, public health staff, and other healthcare providers.

To prepare a timeline to assess training needs— with special emphasis on emergency department personnel, infectious disease specialists, public health staff, and other healthcare providers—the MDPH will collaborate with many professional public health organizations, including but not limited to the MA Health Officers Association (MHOA). A statewide education and training advisory committee will be established with a representative from each of the above to assist the MDPH in the planning and coordination of a needs assessment and subsequent development of training.

Assess the existing capacity to conduct training, needs assessment and planning for public health and private professionals, and to provide access to training in bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies. If necessary, make improvements during this budget cycle.

During the summer and fall of 2000, the DOJ/CDC Public Health Assessment for Emergency Preparedness was conducted with approximately 100 local health departments representing the largest cities and towns in MA, and a sample of small towns. Also participating in the survey were representatives from fire departments, emergency management, emergency medical services, police and hospital emergency departments. The data concerning professional training needs obtained from this survey, along with anecdotal information obtained from various advisory committees, working groups, and professional organizations, has been used as a guide to the training needs of professional groups in MA. Generally, the consensus has been a need for increased and regular training which is specific to the needs of each professional group, and which is conducted by a respected authority. Unfortunately, the training data obtained in this assessment are limited. It does not include the entire state and it fails to address the specific training needs of each professional group.

In order to assess more comprehensively the existing capacity to conduct training, needs assessment and planning, the MDPH proposes to conduct qualitative formative research through focus group testing of various responder, provider groups, local health departments and local public health agencies. It is perceived that access to trainings has been extremely variable and that some responders are quite comfortable in their knowledge of BT response, while others continue to have huge gaps in knowledge. Through formative research, we will determine the actual training needs of the following groups: hospital emergency room staff, infectious disease specialists, infection control practitioners, non-emergency healthcare providers (e.g., community providers).

Develop an ongoing plan for meeting training needs through multiple sources.

MDPH presently provides many training opportunities for public health, clinical and other healthcare professionals. However, there is no set schedule of training opportunities, nor a central clearinghouse of training information. Numerous manuals have been developed to increase local health capacity. A 7-day Epi-In-Action training course, developed by Emory University, was offered to local health department personnel in the spring of 2001. During the fall of 2001, MDPH provided training materials, including texts, fact sheets, journal articles, health alerts, and resource lists, to all hospital emergency rooms physicians, infectious disease doctors and infection control practitioners in MA.

Although most training and educational activities conducted by the MDPH have been offered statewide, it is acknowledged that additional avenues need to be explored to train individuals with responsibility during a BT incident adequately and efficiently. It is also important to consider that with a constantly changing workforce, trainings need to be repeated regularly in order to educate/train new employees. The statewide advisory committee will assist the MDPH in the planning and coordination of trainings throughout the state. As part of a comprehensive plan, the MDPH proposes the following to address training needs.

- A one-day training/orientation held 2-3 times a year at the MDPH state laboratory and other sites around the state, for new local health personnel (focus on public health nurses). Instruction will be provided on how to use the Guide to Surveillance and Reporting, the importance of reporting, how to submit urgent infectious disease reports to the MDPH on a 24/7 basis, how to implement control measures (specifically contact tracking skills).
- To continue to increase the local health department capacity to conduct infectious disease surveillance, reporting and control by: 1) implementing the statewide Guide to Surveillance and Reporting training program on an annual basis and to incorporate more information on BT agents and emergency situations, 2) developing a more in-depth/advanced educational and training module for local public health professionals, modeled after Emory University's Epi-In-Action course, and 3) use other manuals described in #2 as the basis for local health training. The course will be more targeted to public health professionals in local jurisdictions. Efforts will be made to provide both trainings (and others) at no cost to the participants, and possible hold the trainings at night or weekends to maximize attendance. It is recognized that elected/appointed board members will have different, although sometimes overlapping, training needs, and this will be addressed more comprehensively, e.g., through the MAHB Certification For Boards of Health Program.
- To develop the capacity to conduct training throughout the state on a regular basis, BT trainers responsible for regions of the state (e.g., the proposed CRLS or other models of a collaborative regional structure) will be trained to conduct trainings within each region and will act as the contact point for training within that region. A train-the-trainer program will also be developed within each region. Collaborations and coordination may be established with the new MA Institute for Health Communities and Local Public Health (whose mission is to promote partnership among regional and local public health leaders).
- To provide a mechanism to fund approximately 10 community-based regional BT preparedness training projects, e.g., through the new MA Institute for Healthy Communities and Local Public Health and/or Regional Centers for Healthy Communities.
- The development of web-based versions of training programs listed above and/or establish a web-based educational resource guide. A potential collaboration is with the MAHB. Its Certification Program For Boards of Health will continue to deliver annual training and certification to local health departments through the use of simulation and inter-active computer based training technologies, and creation of virtual environments to enhance the learning process.
- To work in conjunction with HAN staff (see Focus Area E) to train users of HAN computer technology.
- To potentially collaborate with the New England Alliance for Public Health Workforce Development to promote and publicize training courses. The Alliance represents schools of public health from Boston University, Tufts University, UMass, Yale, and Harvard University. One of their projects is a public health training calendar that is intended to fill gaps in public health workforce training and to make training more accessible to the currently employed workforce throughout New England.

Develop the capacity at the state and/or local public health agency to facilitate or provide education and training sessions and services on bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies. This should include a trained distance learning coordinator and access to distance learning capabilities in the form of an identified location to receive satellite broadcasts and a higher level of internet connectivity, video, and imaging capacity to view live feeds.

Since 1990 the Division of Epidemiology and Immunization has worked in partnership with MA Community Colleges to provide satellite downlink services in 15 locations throughout the state. Trainings have included: Intro to Emergency Preparedness, Intro to Terrorism, Incident Command System, Medical Response to Chemical Terrorism, Communication Skills for Public Health Professionals, West Nile Virus, Operation TopOff, and Weapons of Mass Destruction. This system works best when a program can be scheduled months to weeks in advance. It is limited as far as emergency broadcasts are concerned. A MDPH Distance Learning Coordinator was hired in 2000.

Develop formal partnerships with schools of public health and medicine, other academic institutions, and other organizations for the provision of education and training.

Collaborations have been established with various professional partners and local health organizations. For example, MHOA and MAPHN co-sponsored the Guide to Surveillance and Reporting training program held in the fall of 2001. The Division of Epidemiology and Immunization collaborated with MMS on a handwashing campaign. The Boston Public Health Commission has developed and implemented a "Grand Rounds" program on BT agents for emergency department personnel, with technical assistance and support from MDPH and CDC. MDPH has also collaborated with local health departments on various projects. For example, a large number of local health departments were involved in giving feedback on the development of the MDPH Foodborne Illness Investigation and Control Reference Manual, the MDPH Guide to Surveillance and Reporting, the MDPH Comprehensive School Health Manual, and the Handbook for Local Public Health Nurses. Local health has built relationships with MDPH through the Prevention Centers, whose mission is to promote and support community-based prevention to create and sustain healthy communities.

Other collaborative efforts around bioterrorism training have included the development (in conjunction with the Department of Fire Services, Management Sciences for Health, and David Ozonoff, MD, MPH from the Boston University School of Public Health) of a daylong educational module entitled "Preparing for Local Infectious Disease Emergencies including Bioterrorism." The training was directed towards local public health officers, police, fire, and local hospital personnel and was offered to all 351 towns in the commonwealth. Trainings were conducted in 6 locations throughout the state with over 300 participants representing 76 towns. Each training consisted of lectures, tabletop exercises, and directed activities to enhance collaboration of attendees in adjacent jurisdictions. Over 60% of those completing evaluations rated the overall experience as "excellent.." A videotape of the training has been made available to any local health departments who were not able to attend the live training.

Ensure educational expertise and review of training program content and curricula by:

a) developing/providing training for a speaker's bureau; b) providing training in public health skills to program staff; and c) supporting costs (travel, course fees) for training critical program staff using existing courses.

There is currently no formal speaker's bureau available through MDPH. However, MDPH staff are available to present information on bioterrorism to hospital personnel, first responders, community organizations, public health organizations, local health departments and schools. The MA Infectious Diseases Society and the BPHC have already developed a speaker's bureau on bioterrorism. The MDPH currently provides funding for the BPHC to develop a bioterrorism curriculum for emergency department personnel and hospital staff that has resulted in a team of trained clinicians who are available to give grand rounds at metro-area hospitals.

MDPH will expand the speaker's bureau (focus on infectious disease and emergency medicine providers, but to include non-emergency providers) in collaboration with the MA Infectious Disease Society, the MA Hospital Association, the MA Medical Society, and the Schools of Public Health, and include speakers on other infectious diseases. Timely reporting and specified pathogens or unusual clusters of disease will be emphasized. We would like to enhance our training by cross training with other agencies, such as MEMA, increase our number of tabletop exercises involving numerous infectious disease agents, and to increase our general terrorism trainings to include those beyond the infectious disease emergencies, including the mental health and substance abuse impact. Members of the advisory committee will give input on appropriate program content and curricula.